

February 21, 2022

The Honorable Jocelyn G. Boyd
Chief Clerk/Executive Director
Public Service Commission of South Carolina
101 Executive Center Drive
Columbia, South Carolina 29210

RE: Docket No. 2021-307-E, Petition to Review Grid Reliability/Stability Proposal

Dear Ms. Boyd

This will record the response of the Petitioner, Ananta Gopalan to the filing of Mr. Belton T. Ziegler of Womble Bond Dickinson (US) LLP, dated February 18, 2022. First, please allow me to thank the Public Service Commission to take this matter seriously to place my request as a docket in their system. Second, I would like to thank Mr. Ziegler of Womble Bond Dickinson (US) LLP, representing the Dominion Energy, for their thoughtful consideration of the referenced Petition.

I cannot overstate the fact that the availability of an affordable electric power is the most essential need to sustain life in our modern world right next to breathable air. As we depend on electricity more and more, it becomes even more critical that we have an uninterruptible supply of it. Electric power grid and its management is an integral part of its uninterruptible supply chain.

In reviewing Mr. Ziegler's input, I would need to make a few clarifications. I will attempt to do that by first quoting from it and follow that with my clarifications or response.

1. On page 2, second paragraph that starts with the sentence, "As to the first point... implementing it would be very costly for solar customers given the cost of the battery assets. These costs would severely limit the practical utility of the Proposal".

My Response: Solar power installations are being subsidized by the taxpayers of the federal and state governments. The roof top installations receive considerable subsidy already. Any such installations that are inherently intermittent, uncontrollable, and unreliable must meet certain requirements to be connected to an electric grid that serves a vast area of the State. Yes. Batteries are costly. Installations of rooftop solar devices are costly. Unit cost of producing electricity in that manner will be costly without any subsidies and the demand for such installations will dwindle on its own. The governments have determined that such installations must be encouraged and are subsidizing them at various levels. Merits of that decision are not a subject of this referenced Docket. The subject of this Docket is grid reliability and its potential

deterioration of it through hundreds of thousands of retail connections with their undesirable characteristics to be part of the supply side of the grid. I disagree that the electric utility, Dominion Energy should be concerned about the costs associated with the retail roof top solar installations for their customers and their need to sell their solar-derived electrical energy to the supply side of the grid that in turn introduces unpredictable variability to it.

Please allow me to point out that the electric grid lacks any meaningful ability to store electrical energy at its operating power level. That means, the demand for electricity by the users connected to the grid must be matched by the generating capacity in operation connected to it. Such a stringent requirement, when faced with variable demand, must have generating capacity stratified, i.e., via base load and peaking load capabilities. Up until recently, the base loads are powered by gas fueled generators, nuclear fueled generators, and coal powered generators. The operating characteristics of both the nuclear and coal powered generators can only allow them to be base-load generators due to their inherent time constants. Gas powered generators, on the other hand can provide certain level of transient response flexibility, suitable for peak load adjustments. That is the operating scenario on the supply end of the grid.

On the demand side however, variability is common as the type and nature of customers drawing power from the grid according to their needs at any given time. That has always been the case since the electric grid was first installed in New York City in early 1900s. The grid management has been able to deal with those uncertainties on the demand side of the grid while depending on the reliability of the generators connected to the supply side of the grid. Let us now introduce the retail solar power producers, hundreds of thousands of them projecting their ability to supply the grid with their unreliable, intermittent, and uncontrollable units under the current arrangement. That allowance has introduced a significant unreliability to the grid at the supply side of the grid that did not exist before. Now, the grid management must not only deal with fluctuating demand side but also fluctuating and uncontrollable supply side. The purpose of the Proposal under this Docket is to preserve the integrity of the supply side while dealing with the fluctuating demand side of the grid as has been done during the decades of grid system operation.

2. On page 2, third paragraph that starts with the sentence, "Furthermore, while the Proposal would create a storage-based buffer against solar intermittency, it would not fully solve the issue of subsidization between solar and non-solar customers."

My response: Whether to subsidize retail solar customers or not must not be resolved by jeopardizing electric grid reliability. That subject of subsidy and how much must be resolved by the State and Federal governments with the expenditure of taxpayer funds. In my opinion, the subsidy issue with retail solar power installations does not belong to the operator of the electric grid. The number one requirement of the electric grid operator including the electric utilities is to assure reliable electric power supply.

3. On Page 2, third paragraph, second sentence, “Under the Proposal, solar customers would still depend on the grid to supply their need for power when their batteries were depleted as they would be from time to time by periods of weather or persistent cloud cover”

My Response: Forgive me for stating that it misses the central point of the Proposal. The Proposal isolates the retail roof top solar installations from supplying power to the grid and not the other way around. They will not be power generators feeding into the grid. Yes, of course since they are connected to the grid, the Proposal will allow only one-way flow of electricity to supply any shortfall. That is no different than any other customer in that their needs are not constant and will be varying depending upon their specific conditions requiring the use of electricity. That scenario is no different than what has existed throughout the history of the grid system. However, what it really does is it helps maintain the reliability of the grid system from preventing the introduction of unreliable, intermittent, and uncontrollable sources of hundreds of thousands affecting the supply side of the grid. The Proposal is not against retail rooftop solar installations. On the other hand, it makes those installations independent of the grid-supplied electric power as much as possible which then eases the pressure of the electric utility operator to bring more units online to meet the demand growth.

4. On page 2, third paragraph, third sentence, “The utility would still be required to build and maintain the generation, transmission, and distribution assets required to serve these customers during those times of need.”

My response: I beg to differ. Let us assume those customers with roof top solar installations had not installed them, making them entirely dependent on the grid supply. That aggregate demand on the grid will necessarily require more generation and grid capacity as is stated. However, the majority of those customers with their solar roof top installations will now only occasionally need power augmentation from the grid and not requiring it to supply all their needs. With proper sizing of the rooftop installations and battery pack as outlined in the Proposal, those customers could achieve self-sufficiency in their electric power needs. The utility in the interest of somewhat flattening the growth of demand and in the interest of maintaining grid reliability in its conventional sense, would encourage them to be more independent and not encourage them to sell their power to the grid. Supply side grid isolation as proposed is a win-win situation in that customers with rooftop installations would not have to pay the utility or minimize it while the utility reaps the benefit of slower power generation growth and more importantly, preventing deliberate introduction of unreliability into the grid.

5. On page 2, third paragraph, fourth sentence, “So long as solar customers are connected to the grid and look to the grid to serve them in such times, they must either pay the full cost of the required investment or those costs must be paid by other customers.”

My response: Every customer that is connected to the grid will have to pay towards its investment. There is nothing new about that. The rate determination by the Public Service Commission will take that into consideration. However, the Proposal deals only with the ability

of the solar customers supplying into the grid at the same rate as the retail rate charged by the utility to its customers and that arrangement is detrimental both to the utility by way of dealing with the introduction of unnecessary grid reliability issues and to the other customers who are depending on reliable power delivery. The investments needed to deal with the newly introduced unreliability must now be borne by non-solar customers of the utility.

6. On page 2, third paragraph, fifth sentence, "While the Proposal, if implemented, might reduce some costs incurred in responding to day-to-day solar intermittency, the Proposal does not change the realities concerning other long-term costs which solar customers would place on the system"

My response: I beg to differ. If for example, there are 100,000 rooftop solar customers connected to the grid and if their systems are properly sized, the demand from those customers on the utility must be lot lower than without any rooftop installations. It is also expected that the number of such installations will only grow in time with all the governmental subsidies. There will actually be a long-term cost benefit. With this Proposal, those customers would not be able to flow their intermittent, unreliable and uncontrollable power generation into the supply side of the grid, making it less reliable and more difficult to manage, especially in some acute situation as happened in Texas in 2021.

Let me reiterate. The purpose of this Proposal is to maintain the grid supplied electric power reliable and dependable. It does that just by preventing the reverse flow of power at all those retail solar installations while expecting those installation to be self-sufficient.

Thank you for allowing me to file this response in the official proceedings concerning the referenced Docket.

Respectfully submitted,

Ananta K Gopalan

23 Dove Tree Lane

Bluffton, Sc 29910

603-918-0206; akgop66@live.com